A STUDY OF MEAN PLATELET VOLUME IN ST ELEVATION MYOCARDIAL INFARCTION AND ITS ASSOCIATION WITH SHORT-TERM OUTCOME

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BACKGROUND AND AIM: Acute coronary syndromes (ACS) are an important cause of morbidity and mortality. Platelets play a crucial role in atherothrombosis, the major cause of most unstable coronary syndromes. Mean platelet volume (MPV), a measure of platelet size, is a potential surrogate marker of platelet reactivity. Larger platelets are metabolically and enzymatically more

active and have greater prothombotic potential when compared to smaller platelets. In patients presenting with ST elevation myocardial infarction (STEMI), we sought to assess whether MPV was associated with the short term clinical outcome.

MATERIALS AND METHODS: Blood samples for MPV estimation were obtained on hospital admission in 100 patients (74% men; age 55.5 ± 10.3 years) with STEMI, before thrombolysis. Social and clinical data was collected based on the proforma. Basic investigations were done and they were followed up for one month for the occurrence of complications like left ventricular(LV) dysfunction, cardiac failure, LV thrombus in echocardiography, recurrence of angina, occurrence of arrhythmias and death for a period of 30 days.

RESULTS: The STEMI patients who developed complications had a higher MPV when compared with those who did not develop complications (10.33 ± 0.54 fL, 57% vs 9.76 ± 0.51 fL, 43%; $p < 0.001$). Among the patients, 76% were males. The mean age of the sample studied was 55.5 ± 10.3 years. The prevalence of hypertension, diabetes mellitus and smoking was 26%, 32% and 41% respectively. Incidence of complications was higher among patients with risk factors like hypertension, diabetes mellitus, family history of coronary artery disease and smoking. In subgroup analysis, the mean MPV was significantly higher among patients with ejection fraction < 50%, cardiac failure, arrhythmias and among those who died. MPV was also significantly higher among STEMI

patients who smoked when compared with those who did not. There was no association between MPV and platelet count.

CONCLUSION: A higher MPV in patients with STEMI is associated with an increased incidence of post MI complications at a period of one month from admission. MPV is also higher among patients with risk factors like hypertension, diabetes mellitus, family history of coronary artery disease and smoking. Admission MPV may have a predictive role in addition to conventional risk factors for adverse outcome in patients with STEMI.